

Controlling Polluted Runoff



During the last decade of the 20th century, nonpoint source (NPS) pollution or “polluted runoff” emerged as the leading threat to our nation’s waters. Beginning in the 1990s, OWOW, state water quality agencies, and other public and private sector groups began to devote considerable resources and energy to combating this emerging national problem.

The National Nonpoint Source Program

Under section 319 of the Clean Water Act, all states and territories and more than 50 tribes have established NPS management programs to control polluted runoff. Congress began to award NPS grants to states on an annual basis in 1990, increasing funding from \$38 million in fiscal year (FY)1990 to \$100 million in FY1995, to \$200 million in FY1999, and finally to \$238 million in FY2001. Through these grants, EPA has funded a variety of programs and on-the-ground projects to address pollution from farmland, animal feeding operations, septic tanks, urban and suburban developments, and forestry operations; to repair and protect damaged stream-banks, riparian areas, and wetlands; and to educate homeowners, students, and others on steps they can take to prevent NPS pollution. Most projects are implemented in conjunction with other partners, including the U.S. Department of Agriculture; other federal, state, and local government agencies; and local watershed associations and citizens groups.

Nonpoint Source Success Stories

To highlight the achievements of states, tribes, local governments, watershed groups, and private citizens in reducing polluted runoff, OWOW published two volumes of *Section 319 Success Stories* (EPA-841-S-94-004 and EPA-841-R-97-001). Highlights include the reopening of previously polluted waters to shellfish

harvesting; the return of trout to streams from which they had been absent for decades; the reduction of pollutants running off from farms; the development of new state-enforceable authorities that are resulting in widespread implementation of needed management practices throughout the state; and the formation of effective local citizen-based partnerships to remediate local NPS pollution problems. Volume III, to be released in 2001, will show even greater progress.

The Coastal Nonpoint Pollution Control Program

Recognizing that the high concentration of human population in coastal areas (with more than 50 percent of Americans living within 50 miles of coastal waters) places great stress on coastal water quality, Con-

Strengthened State Nonpoint Source Programs

In recent years, states have taken several major steps to increase the effectiveness of their NPS programs. Most significantly, states have upgraded their NPS programs to reflect nine key elements that the states and OWOW collectively agree represent high-quality programs. These include clear, quantified goals and objectives; effective partnerships with all public agencies and private-sector groups that have a role to play in controlling NPS pollution; implementing the right mix of both statewide approaches to tackle widespread problems and watershed-based approaches to protect water quality where people live and work; and well-organized priority systems.

Many states have significantly increased their own funding programs (beyond the 40 percent match required for section 319 grants) to accelerate the states’ implementation of NPS and watershed programs. Some of these states (e.g., California, Florida, North Carolina, Pennsylvania, Oregon, and Wisconsin) are providing significant sums ranging from \$10 million to more than \$50 million annually to support these activities.

gress enacted the Coastal Zone Act Reauthorization Amendments of 1990 to focus special efforts on combating NPS pollution in coastal waters. Congress mandated that EPA publish “management measures,” which describe the best available, economically achievable techniques to protect coastal waters from nonpoint source pollution, and that states develop programs in conformity with those measures. OWOW’s publication of those management measures was a ground-breaking event in the history of NPS pollution control, in that it presented one large volume of the best available information on NPS control techniques, their effectiveness, and their costs. At present, six states have fully approved coastal nonpoint pollution control programs; another 23 conditionally approved programs are working toward final approval. These state programs include, as required by law, state-enforceable policies and mechanisms as necessary to ensure implementation of the management measures.

State Enforcement Authorities

Although most state NPS activities are implemented on a voluntary basis, with technical and/or financial assistance provided by the states and others, many states have enhanced their programs by adding enforceable authorities to their implementation “toolboxes.” A number of states have added specific authorities regarding storm water controls, forestry practices, and the management of animal feeding operations. OWOW has assisted in this effort by working with the nonpartisan Environmental Law Institute to develop a set of three volumes that highlight the different approaches currently used by states to ensure that needed NPS measures are implemented. These include direct requirements that particular measures be implemented, “bad actor” laws that supplement voluntary approaches (usually with financial support) with regulatory backup, enforceable state water quality standards, and general nuisance laws.



OWOW Teams up with Office of Wastewater Management to Use More Than a Billion Dollars from the Clean Water State Revolving Loan Fund

Over the past 13 years, the Clean Water State Revolving Loan Fund (CWSRF) has funded nonpoint source and estuary projects. In FY2000 almost \$190 million was made available for NPS projects, with 28 states taking advantage of the CWSRF's flexibility. A total of more than \$1.2 billion has been provided to NPS and estuary projects over the life of the program. The types of NPS and estuary projects continue to diversify, ranging from implementation of agricultural best management practices to septic tank upgrades and underground storage tank remediation. Land conservation to protect wetlands, riparian areas, and sources of drinking water continues to gain a growing share of the CWSRF.



Working with Other Federal Agencies

Federal agencies manage almost one-third of all land in the United States, and they also manage many of the nation's water resources. Therefore, federal agencies such as the Forest Service, the Bureau of Land Management, the National Park Service, the U.S. Army Corps of Engineers, the Bureau of Reclamation, and others play a critical role in the protection of our nation's water quality. These agencies and others, including EPA, recently signed a Unified Federal Policy that charts the future course of concerted federal activities to manage watersheds to protect water quality. In addition, EPA and state nonpoint source agencies work extremely closely with the U.S. Department of Agriculture and others to combine expertise, personnel, and funds (e.g., section 319, USDA's Environmental Quality Incentives Program, and USDA's Conservation Reserve Program and Wetlands Reserve Program) to implement numerous joint programs and projects throughout the United States.

Accounting for Results

An essential program management tool is the collection and storage of information on program implementation in an easily accessible format to enable monitoring of past performance and appropriate program improvements based on that monitoring. Early in the program, OWOW developed a Grants Reporting and Tracking System to allow tracking of section 319-funded activities. OWOW is currently modifying that system to greatly enhance its capability to track improvements such as pollutant reductions that result from funded projects. Furthermore, OWOW is linking this system to other systems, both existing and under development, which will allow the Office to determine the correlation between project implementation and actual water quality improvements.



J & K Hollingsworth, U.S. Fish and Wildlife Service



Low-Impact Development and Smart Growth

In recent years, experts and increasing numbers of citizens have come to understand the significant relationship between development patterns and methods and water quality. Our society is continuing to grow, and with growth come development and its attendant impacts on environmental quality, including water quality.

OWOW has worked closely with national expert organizations, including the Center for Watershed Protection, the Watershed Management Institute, the Center for Low-Impact Development, and the Nonpoint Education for Municipal Officials program, as well as with various governmental agencies and associations, to assemble, analyze, and disseminate information on how to manage growth and development in a manner that protects water quality. Some of the most useful and successful volumes that OWOW has published or supported are *Site Planning for Urban Stream Protection*, *Rapid Watershed Planning Handbook*, *Low-Impact Development Design Strategies*, and a multivolume set of periodicals, *Watershed Protection Techniques*. EPA has also collaborated with the National Association of Counties (NACo) and the International City/County Management Association (ICMA) on *Protecting Wetlands*, *Managing Watersheds...Local Government Case Studies*. In addition, OWOW has created an extensive Web-based Model Ordinance Database that includes many actual municipal ordinances and also provides guidance on the many options that local governments have to modify these examples and adapt them to local circumstances and needs.

With support from OWOW, several sustainable growth pilot projects are under way in the National Estuary Program, including futures and visioning tools development at the Massachusetts Bays Estuary and Maryland Coastal Bays, development and build-out analyses in the Delaware Estuary, model community planning in Puget Sound, and an examination of the impact of regulatory programs on land use in the Lower Columbia Estuary. OWOW is also working to link the use of "Smart Growth" principles to other EPA programs, such as ground water protection, storm water management, brownfields redevelopment, and water quality permitting.

"As a former planning official myself, let me assure you that we respect the roles of the states and local governments in making land use decisions, and we are working to respond to the requests many have made to provide information on how the decisions can be made with sensitivity to impacts on aquatic resources."

—Bob Wayland, NACo/ICMA Workshop, September 2000

Gulf of Mexico Hypoxia

Along the Gulf of Mexico's Texas-Louisiana Shelf, a large "dead zone" forms each summer. This condition, which scientists call hypoxia, is characterized by reduced sunlight and decreased oxygen levels. Scientific evidence indicates that excess nitrogen from the 31-state Mississippi/Atchafalaya Rivers drainage basin drives the onset and duration of hypoxia. Approximately 40 percent of the U.S. fisheries landings, including a substantial part of the nation's most valuable fishery (shrimp), comes from this productive area.



William B. Folsom, National Marine Fisheries Service

Since 1996 OWOW has provided leadership for a state/tribal/interagency task force, charged with developing an action plan to reduce Gulf hypoxia. Efforts to address hypoxia were bolstered in 1998 when Congress passed the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA). In October 2000 the Task Force reached consensus on a final action plan. A major goal of the *Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico*, published in January 2001, is to significantly reduce the size of the hypoxic zone to less than 5,000 square kilometers (1,930 square miles), a reduction of the hypoxic zone by about half of the average, over the next 15 years. The action plan calls for the development of strategies by states and tribes, on a subbasin basis, to achieve a 30 percent reduction in discharges of nitrogen through the river system to the Gulf.